Managing Aviation Risk

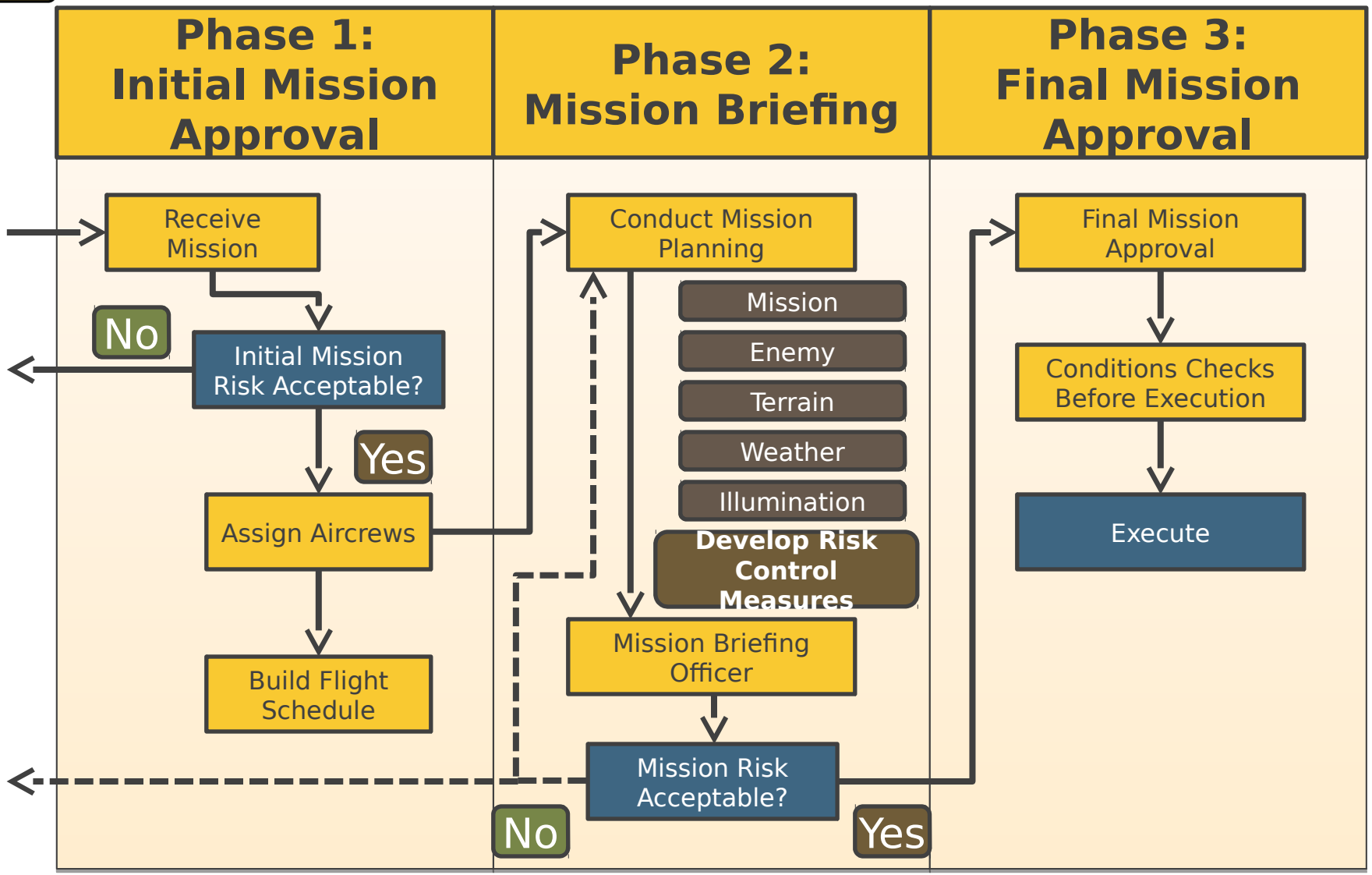
BOTTOM LINE

Managing aviation risk answers this fundamental question….

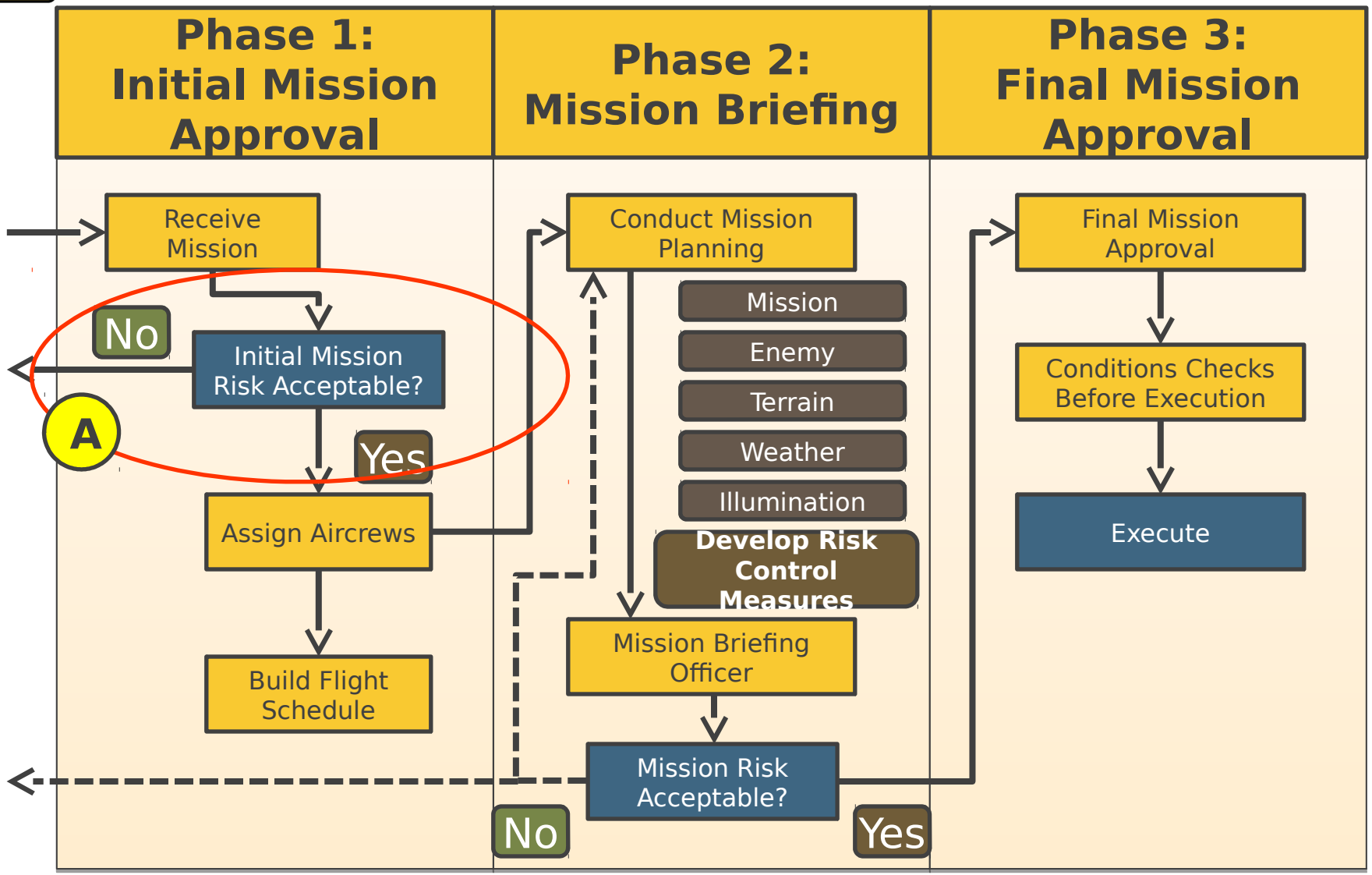
Is **Crew Proficiency**
greater than the
Mission Risk
executed in the
Current Environment?

- **AR 95-1**
- **FM 5-19 Composite Risk Management**

THE PROCESS


Phase 1: Initial Mission Approval
Phase 2: Mission Briefing
Phase 3: Final Mission Approval
Receive Mission
No
Initial Mission Risk Acceptable?
Yes
Assign Aircrews
Build Flight Schedule
Conduct Mission Planning
Mission
Enemy
Terrain
Weather
Illumination
Develop Risk Control Measures
Mission Briefing Officer
Mission Risk Acceptable?
No
Yes
Final Mission Approval
Conditions Checks Before Execution
Execute

THE PROCESS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MISSION RISK

EXTREMELY HIGH
(Frequent or likely chance of catastrophic loss)

- Extremely complex missions - **and** -
- Adverse terrain or environmental conditions - **and** -
- Significant enemy threat

HIGH
(Occasional or seldom chance of catastrophic loss)

- Extremely complex missions **- or -**
- Adverse terrain or environmental conditions **- or -**
- Significant enemy threat

MODERATE
(Unlikely probability of catastrophic loss)

- Less complex mission
- Acceptable terrain or environmental conditions
- Enemy threat present

LOW
(Negligible probability of catastrophic loss)

- Low complexity missions
- Favorable terrain or environmental conditions
- Mitigated enemy threat

UH-60 CREW CAPABILITY TIERS

TIER 1 UH60 PC/PI/CE/DG

All missions

- ≤ 25% Illumination and < 30 degree moon angle
- Weather
  - Day: ≤ 500’ ceilings &1 Mi
  - NVG: ≤ 700’ ceilings & 2 Mi
- Winds: > 44kts
- HLZs
  - Heavy dust HLZ
  - Pinnacle / confined area
  - 1or 2 wheel landings
  - ≤ 10% MTA margin

TIER 2 UH60 PC/PI/CE/DG

Most missions (Green Illum: MED Chase/ARF, BFC)

- ≥ 25% Illumination and < 30 degree moon angle
- Weather
  - Day: > 500’ ceilings & 1Mi
  - NVG: > 700’ ceilings & 2 Mi
- Winds: ≤ 44kts
- HLZs
  - Moderate dust HLZ
  - > 10% MTA margin
  - < 10% Slope

TIER 3 UH60 PI/CE/DG

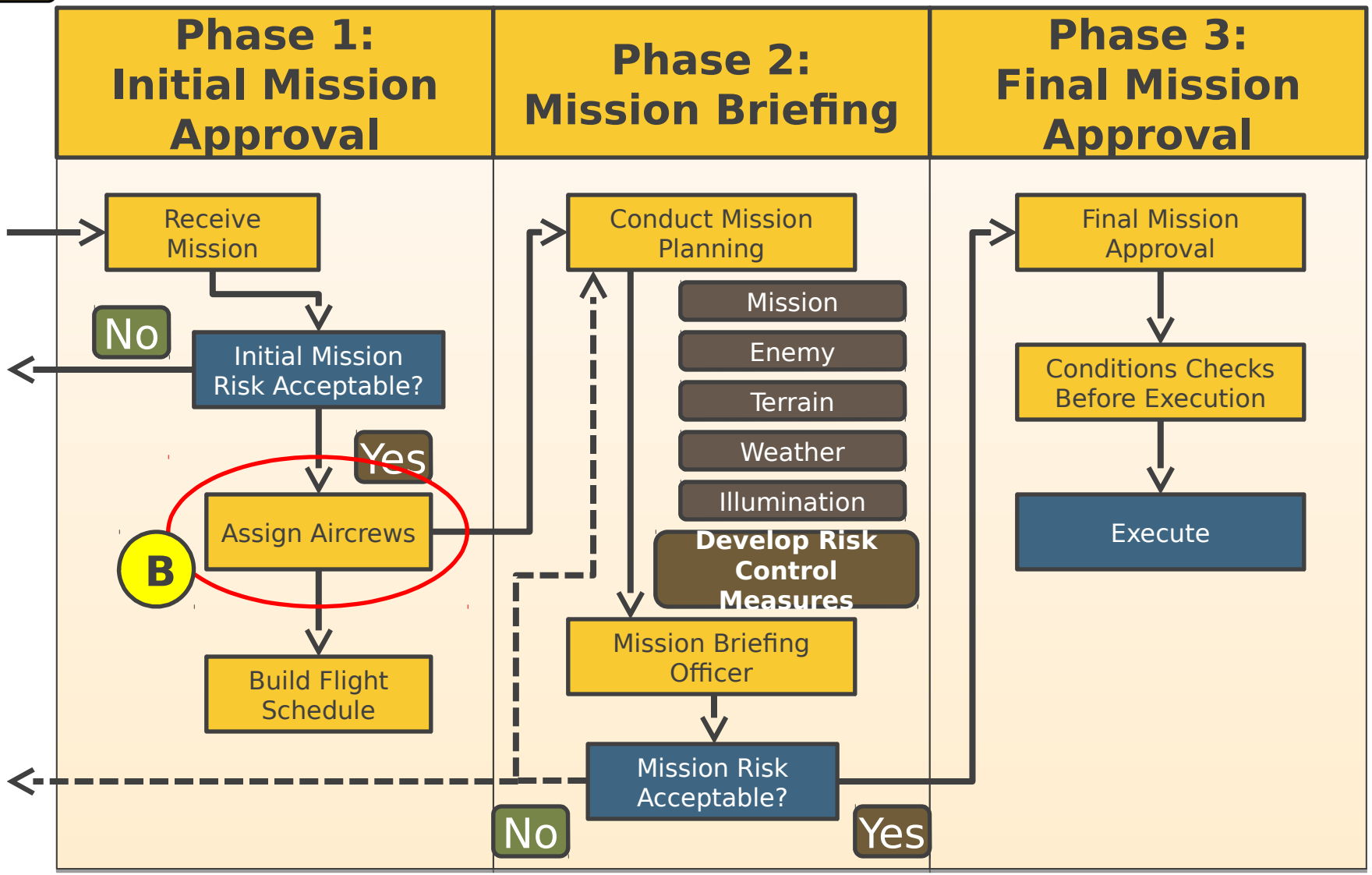
Basic missions (Day MED Chase, Day ARF, BFC)

- ≥ 25% Illumination and > 30 degree moon angle
- Weather
  - Day: ≥ 700’ ceilings & 2 Mi
  - NVG: ≥ 1000’ ceilings & 3 Mi
- HLZs
  - Light to moderate dust HLZ
  - ≥ 15% MTA margin
  - < 10% slope

	TIER 1 PICs	TIER 2 PICs
TIER 1 PI	All Missions (Tier 1-3)	All Tier 2-3 Missions
TIER 2 PI	All Tier 2 and Limited Tier 1 Missions	Tier 2-3 Missions
TIER 3 PI	Tier 2-3 Missions	Tier 3 Missions Only

- Tier 1 PICs should not be paired with a Tier 3 PI for the most complex or important missions
- PCs will be on the controls for all landings under the most extreme conditions
- Tier 2 PIC’s should be paired with Tier 1 PIs for most missions
- Tier 1 PCMs will not be paired with a Tier 3 CE/DGs for the most complex

THE PROCESS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TASK FORCE CREW/MISSION SCHEDULE

Example Only

Task Force Blackstar Crews as of 22 January 2015														
MISSION NAME	MISSION TIER	AC TYPE	AMC (A)	PIC	TIE R	PI	TIE R	FE/CE	TIE R	CE/DG	TIE R	CE/DG/MO	TIE R	REQUIREMENTS-CAPABILITY
MED 1st Up	1	HH60	A	CW3 Fender		CW2 Martin		SPC Vox		SPC Fernandez		SSG Pearl		
T1 Recon (Day)	3	AH64		CW2 Schecter		CW2 Dabber								
		AH64	A	CW3 Taylor		CW2 Squire								
BFC (Day)	2	UH60		CW2 Peavy		CW2 Jackson		SPC Rowland		SPC Ampeg				
		UH60	A	CW4 Bogner		CW3 Gibson		SPC Egnater		SPC Randall				
Lightning Strike (Night)	1	UH60		CW2 Ibanez		CW2 Orange		SPC Kramer		SPC Hartke				
		UH60	A	CW4 Marshall		CW3 Crate		SPC Rivera		SPC Fuchs				

Example Only

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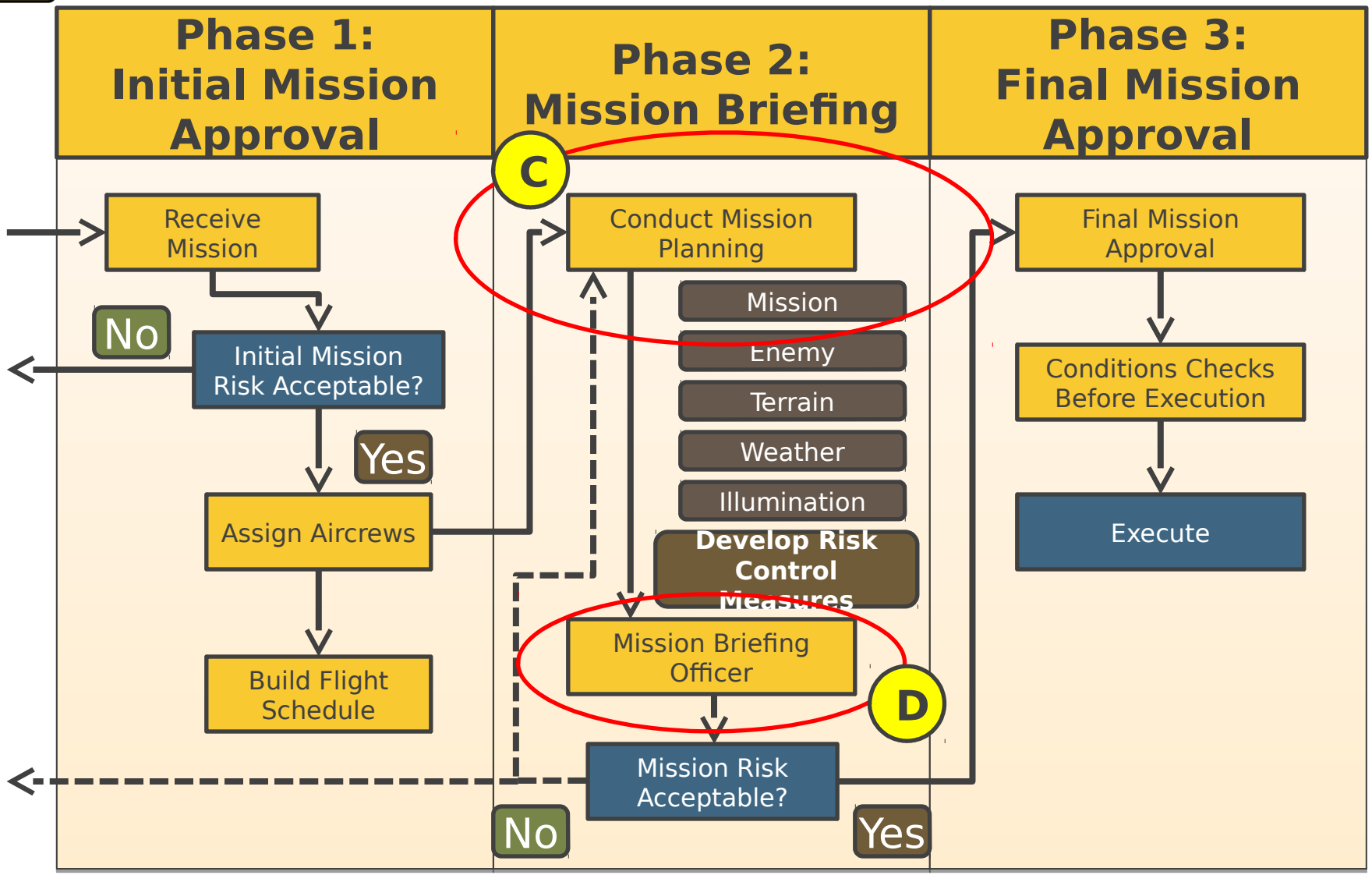
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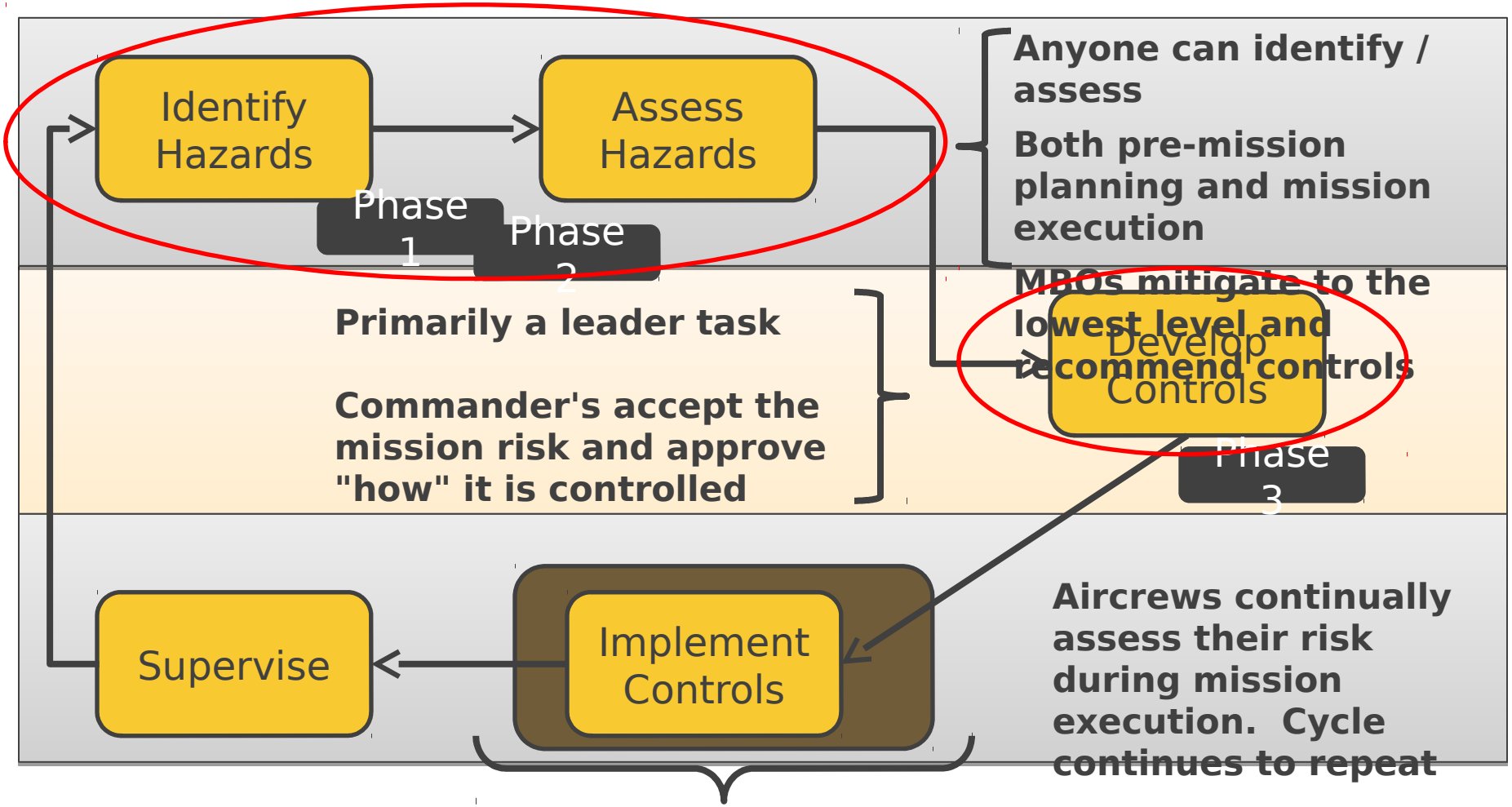
RISK MANAGEMENT STEPS



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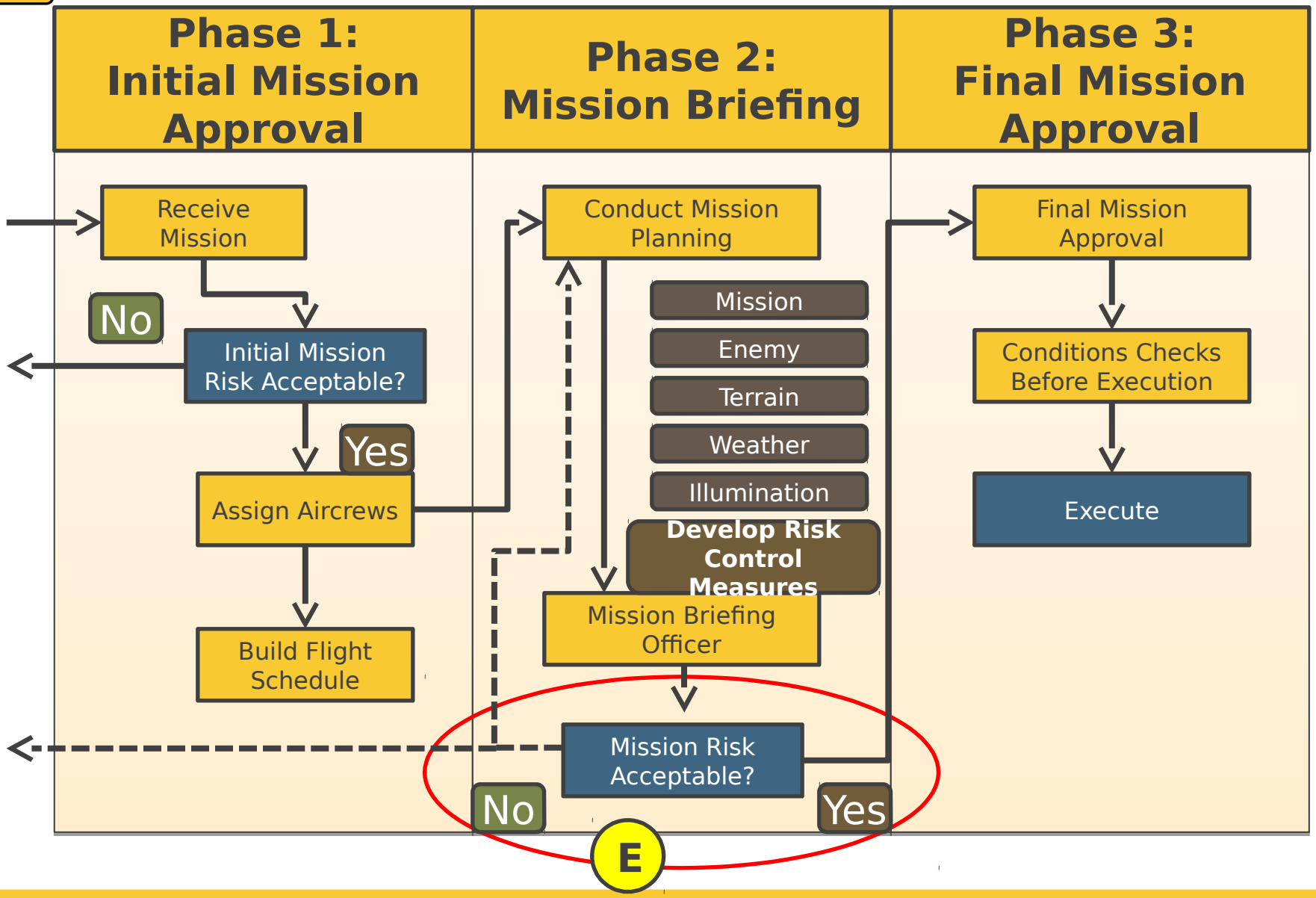
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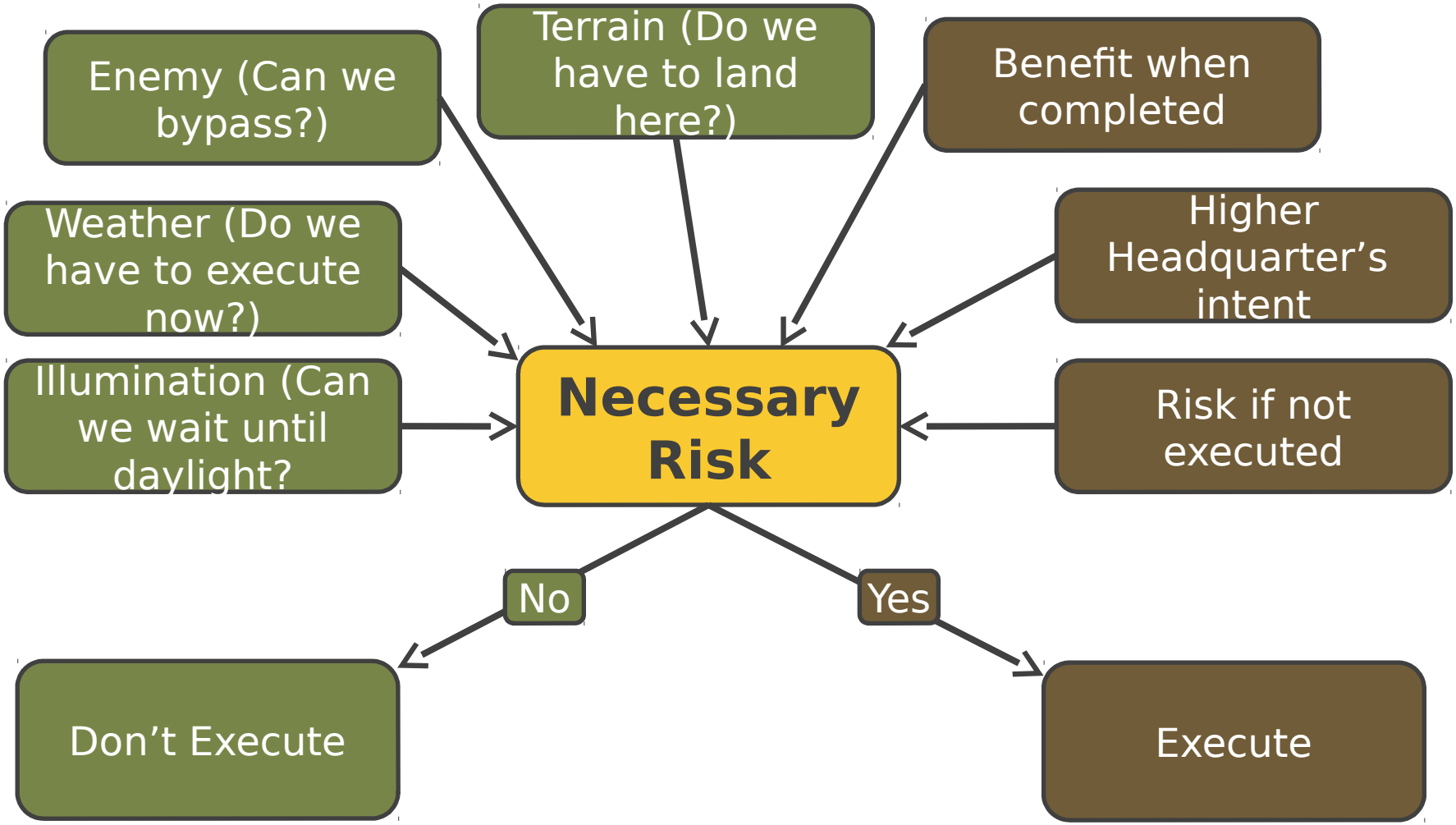
ACCEPTABLE MISSION RISK



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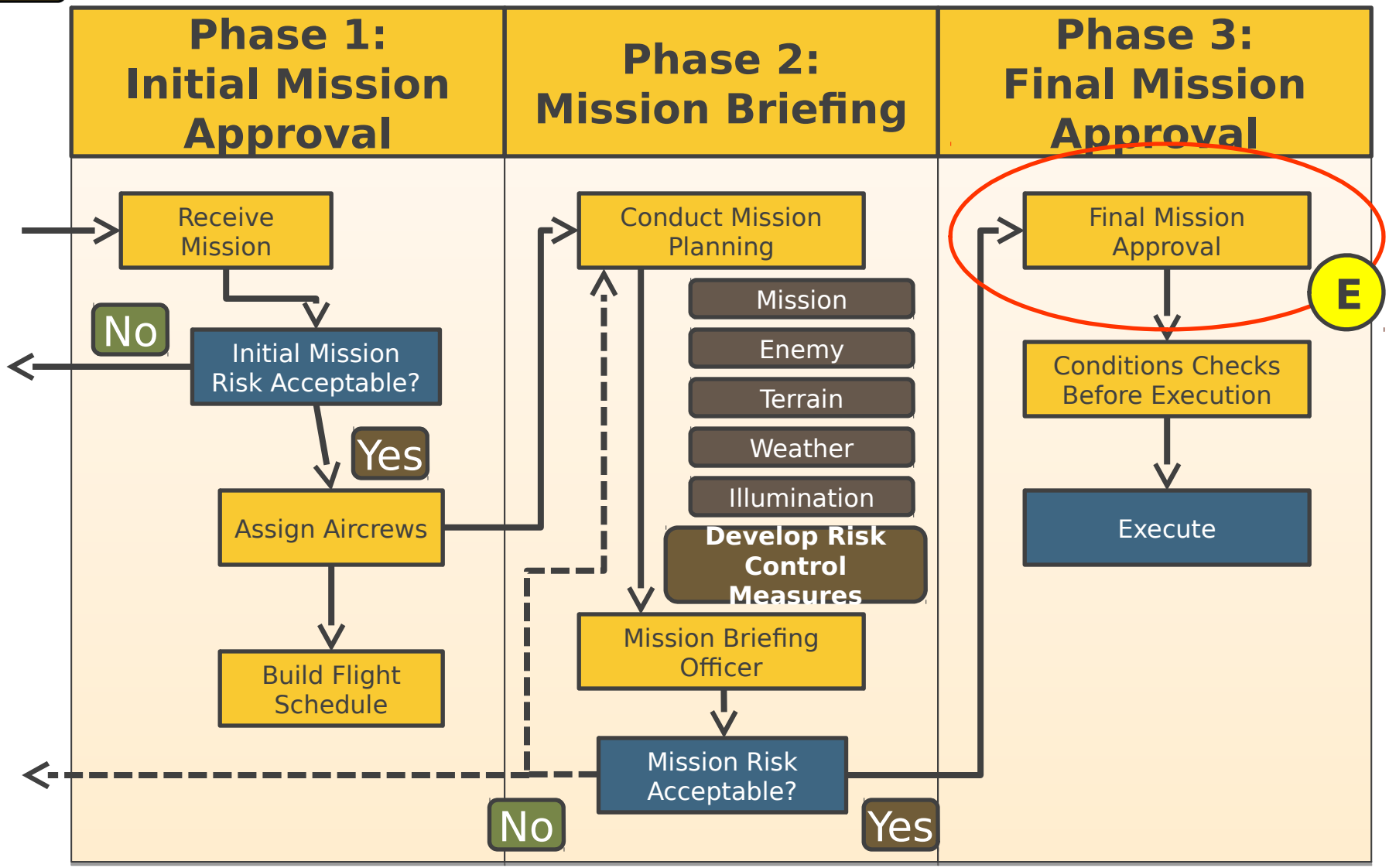
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Is **Crew Proficiency** greater than the **Mission Risk** executed in the **Current Environment**?

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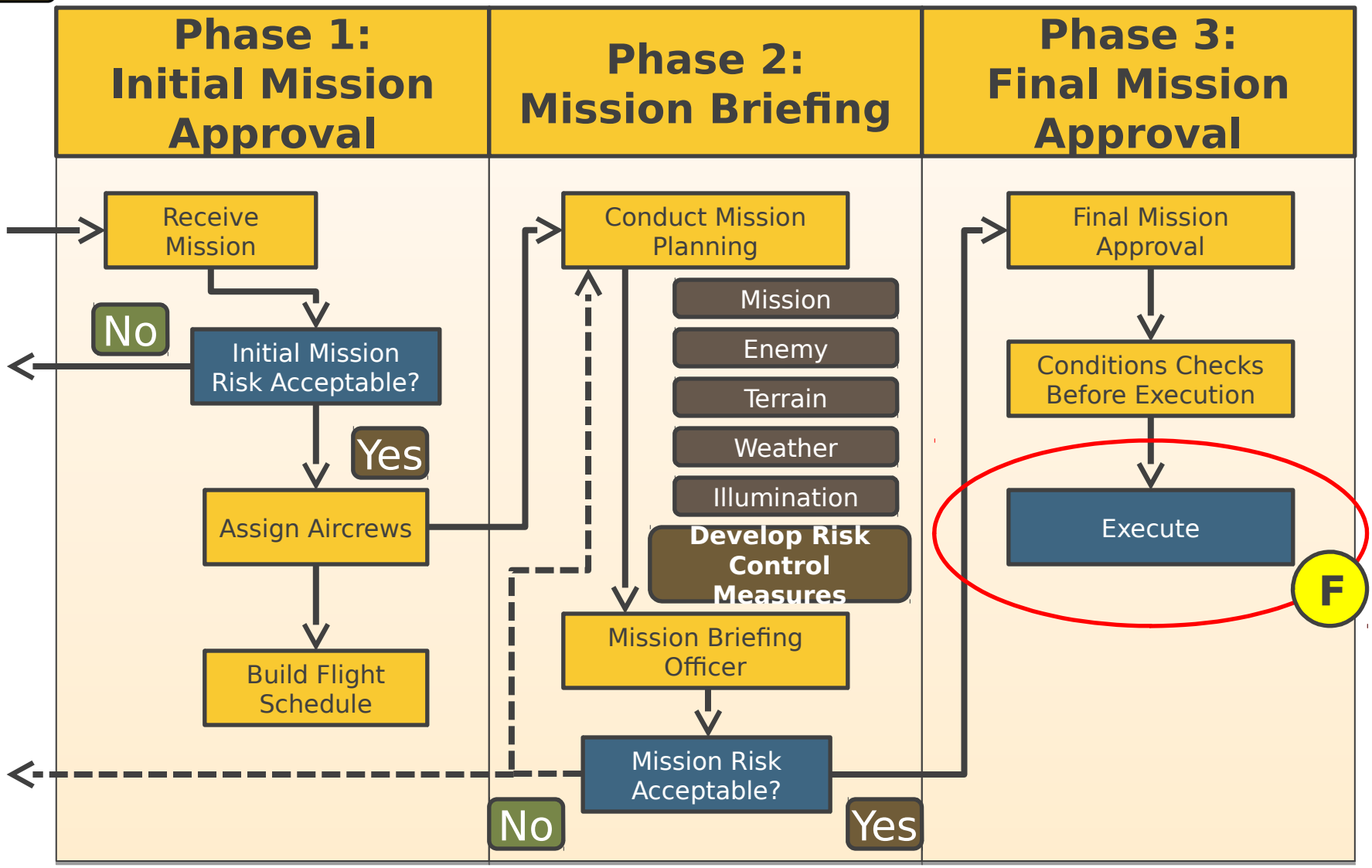
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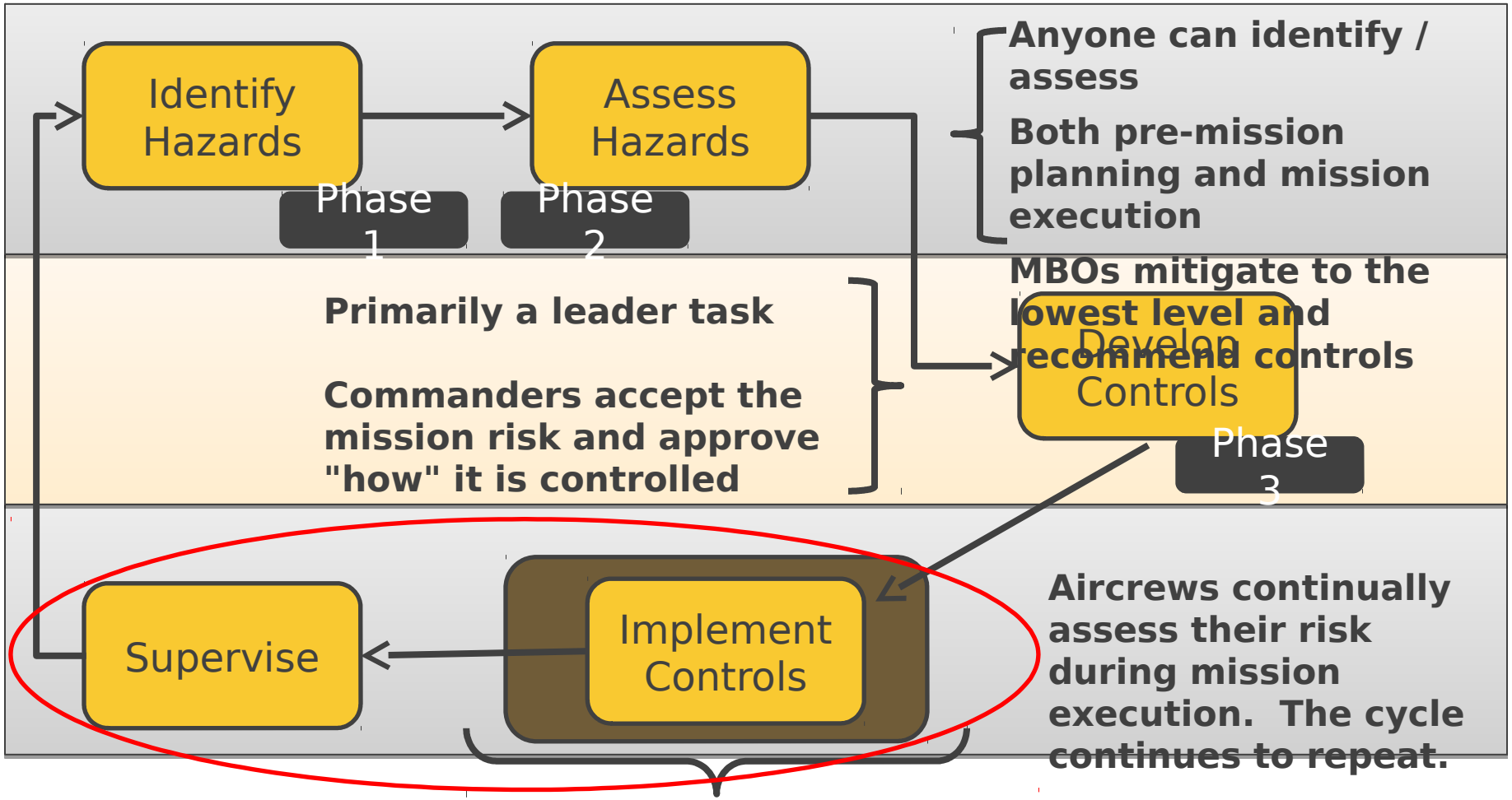
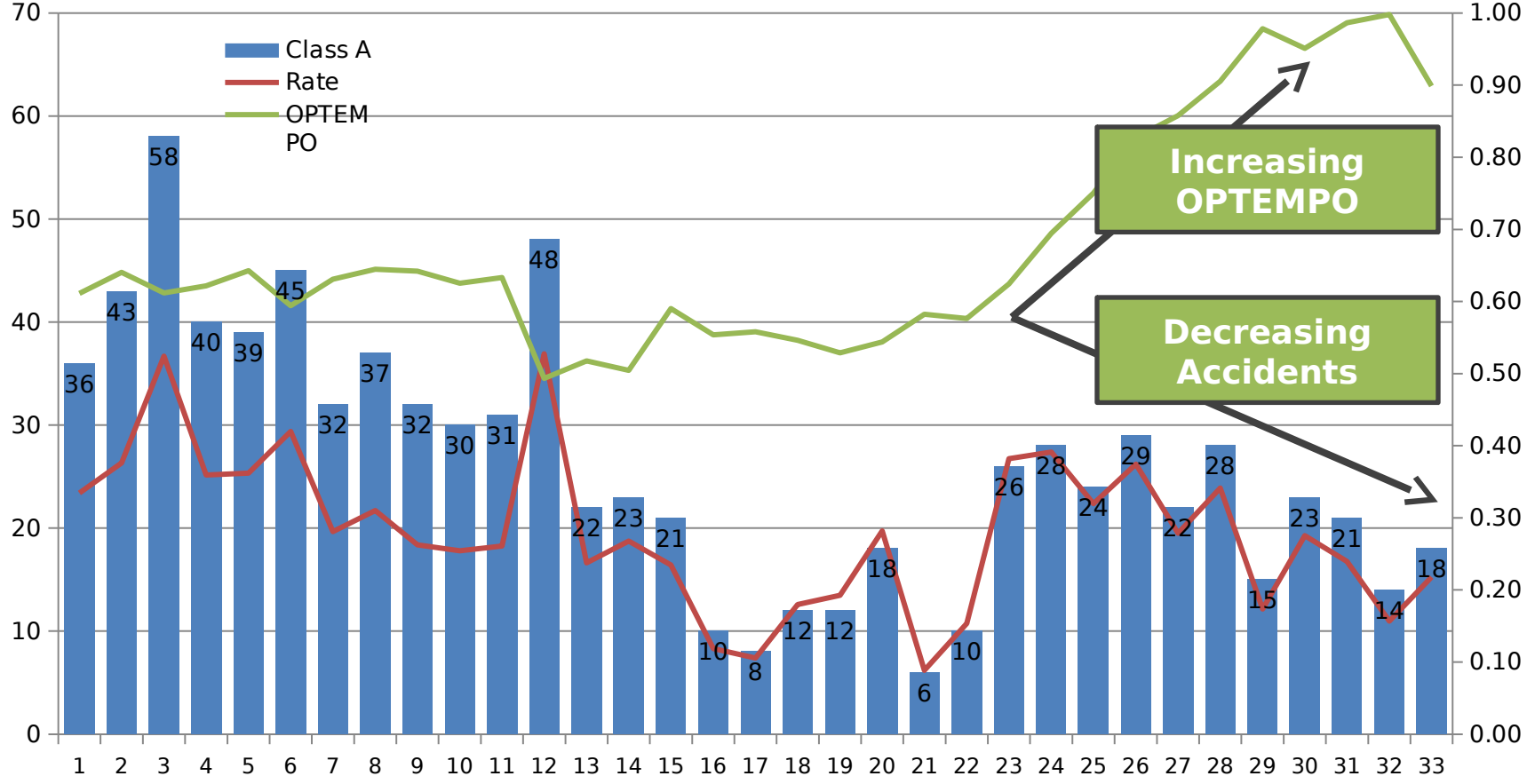
RISK MANAGEMENT STEPS



The most important step

The Pilot-in-Command makes decisions IAW the commander's intent and controls

CONCLUSION



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DEFINITIONS – AIRCREW TRAINING PROGRAM

Aircrew Training Program Progression: Aviation commanders use a series of readiness levels (training gates) to track implementation and accomplishment of the Army's crawl, walk, and run training methodology. The gates are categorized as Readiness Levels (RL). RL training develops individual and crew proficiency in tasks that support collective tasks. RLs identify the training phase in which crewmembers are participating and measure crewmember readiness.

- RL3 (Individual Training): Lowest level of training. Normally used for a new aviator or an aviator that has not flown for more than 6 months. Aviator requires qualification or refresher training on the 1000-series base tasks. Aviator must progress to RL2 within 90 days by demonstrating proficiency to an Instructor Pilot.

- RL2 (Mission Training): Mission task training: Aviator is in training for the unit's selected 2000-series mission tasks. Aviator must progress to RL1 within 90 days by demonstrating proficiency to an Instructor Pilot

- RL1 (Continuation Training): Aviator is fully trained in all 1000 and 2000 series tasks. RL1 aviators are selected by the commander to perform collective training and missions.

Flight Activity Categories (FAC): Flight Activity Categories are categories assigned by the Aviation Brigade Commander to all aviators in operational flying positions. FAC designations are the commander's tool to determine the number of flight hours and levels of proficiency required of assigned pilots

FAC 1: Highest degree of individual and collective proficiency required. Most pilots at the company level are assigned this level

FAC 2: High degree of individual but less collective proficiency required. Most pilots at the battalion or brigade level are assigned this level

FAC 3: Aviators assigned to TDA positions or in brigade-level and above organizations. Aviators maintain proficiency using flight simulators

FAC 4: New FAC category added July 2014 for aviators in TDA positions without access to flight

DEFINITIONS – AIRCREW TRAINING PROGRAM

Commander's Task List (CTL): The commander's task list is a written agreement between the commander and the crewmember. The requirements established by the CTL are tailored to the proficiency training needs of the individual crewmember. It designates the authorized duties and flight stations the crewmember may occupy and the hours, tasks, iterations, evaluation requirements, and responsibilities the crewmember must accomplish during the training year.

Aircrew Training Manual Tasks: All tasks in the ATMs have a ten-digit TRADOC number. For ease of identification, the last four digits of this number are 1000-, 2000-, or 4000-series indicating they are base, mission, or maintenance tasks, respectively.
- All 1000-series tasks are base tasks. A base task is common to all RCMs or NCMs authorized to perform duties in a particular aircraft, regardless of FAC level, unit METL or duty position. Base tasks cover those baseline skills, knowledge, and procedures necessary to operate the aircraft and selected installed equipment.
- All 2000-series tasks are mission tasks. Mission tasks are selected by the commander to support the unit METL. Commanders may further tailor the selection of mission tasks to match a crewmember's duty position. Mission tasks also standardize conditions, standards, performance steps and evaluation requirements of equipment not installed on all aircraft of a series.
- Commanders may develop additional tasks for inclusion on the CTL, as needed, to accomplish the unit's mission (see appendix B). The commander assigns these tasks a 3000-series number and lists them separately on the CTL.

Task and Iteration Requirements: During the training year, each RL 1 crewmember must perform a minimum of one iteration of each base task as outlined in the appropriate ATM. RL 1 crewmembers must also perform a minimum of one iteration of each mission and additional [illegible] tionally, RL 1

DEFINITIONS – AIRCREW TRAINING PROGRAM

Flying Hour Minimums: Each aviator is required to fly a minimum number of flight hours per each semi-annual period in compliance with their specific aircraft's Aircrew Training Manual. The number of hours varies per aircraft type but is typically around 30 hours each semi-annual for a FAC 2 aviator and around 48 hours each semi-annual for a FAC 1 pilot

Key Concepts for CG USACRC

- Aviation **proficiency** and aircraft **currency** are significantly different. If a pilot flies his semi-annual minimums and performs his minimum number of CTL iterations, they are normally only considered current. Proficiency requires additional flight time and focused iterations.
- **The number of flight hours funded for a unit directly impacts aviator proficiency**. HQDA is currently funding most aviation battalions at around 11 hours per crew per month. This is bare minimum to keep current. (By way of comparison, HQDA was funding at almost 14 hours per crew per month during FY04-FY12).
- **Unit manning as a significant impact on aviator proficiency**. As personnel turnover increases, the pool of aviators shifts from RL1 in continuation training down to RL3 in qualification training. This requires a significant effort and time by unit instructor pilots to move pilots through the sequence. On average, an inexperienced pilot requires 30-40 flight hours to progress from RL3 to RL1. 40 flight hours in garrison can required upwards of 60-70 calendar days.
- **Unit manning also has a significant impact on aviation maintenance**. As personnel turnover increases, the pool of experienced mechanics decreases which in turn reduced the number of aircraft available for training. For every flight hour flown, the aviation maintainers must invest 4-5 man hours to service the aircraft. At regular flying hour intervals (depending on the aircraft type), aircraft must complete a "phased maintenance inspection". An aircraft phase normally requires 45-60 calendar days to complete.
- Aviation Commanders must continually balance the competing demands of ATP requirements [illegible] aircraft at the required

DEFINITIONS – MISSION APPROVAL PROCESS

Initial mission approval authority: Commanders or their designated representatives (operations officer, S–3, and so forth) determine the mission feasibility and either accept or reject the mission for the command. The initial mission approval authority accepts the mission in accordance with the commander's policies and procedures by considering some of the following factors: alignment with the unit's mission essential task list, aircraft required and availability, availability of required special mission equipment, trained air crew availability, other training and mission impacts, tactical and threat considerations, and so on.

Mission briefing officer (MBO): Commander or their designated representative that interacts with the mission crew or air mission commander to identify, assess, and mitigate risk for the specific mission. Commanders will select briefing officers based on their experience, maturity, judgment, and ability to effectively mitigate risk to the aircrew and designate them by name and in writing. Mission briefers are authorized to brief regardless of risk level. Briefing officers must be a qualified and current pilot-in-command in the mission profile as determined and designated by the commander.

Final mission approval authority (FMAA): Members of the chain of command who are responsible for accepting risk and approving all aviation operations (ground and air) within their unit. They approve missions for a specific risk level. Final mission approval authorities may only approve those missions whose assessed risk level is commensurate with their command level. Commanders in the grade of O–5 and above will select final mission approval authorities from the chain of command and designate them in writing along with the level of risk (low, moderate, high, extremely high) they are authorized to approve. At a minimum, company commanders and below are the final mission approval authority for low-risk missions, battalion commanders and above for moderate-risk missions, brigade commanders, and above for high-risk missions, and the first general officer in the chain of command for extremely-high-risk missions. Aviators may be designated as the final mission approval authority and not rank.

DEFINITIONS – MISSION APPROVAL PROCESS

Risk assessment worksheets (RAW): Commanders will develop local briefing checklists and risk assessment worksheets (RAWs) for use in assessing aircrew mission planning and risk. The RAWs will be constructed using the concepts outlined in FM 5–19. The commander will combine guidance from higher commanders with personal knowledge of the unit and experience to assign levels of risk to particular parameters. Risk levels are used to elevate items of interest to successive levels of command for visibility and acceptance.

Pilot in Command (PC): The individual responsible for and having final authority for operating, servicing, and securing the aircraft he or she pilots. Designated by the unit commander during the mission approval process.

Air mission commander (AMC): When two or more aircraft are operating as one flight, the unit commander will designate one of the rated crewmembers of the flight as an air mission commander to be in command of all aircraft in the flight. The designation of air mission commander is an assignment of command responsibility and is not an aircrew duty assignment.